BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Concerning Energy Efficiency Rolling Portfolios, Policies, Programs, Evaluation, and Related Issues.	Rulemaking 13-11-005

COMMENTS OF THE ASSOCIATION OF BAY AREA GOVERNMENTS (CPUC #941) ON BEHALF OF THE SAN FRANCISCO BAY AREA REGIONAL ENERGY NETWORK REGARDING ENERGY EFFICIENCY BASELINES AND TO-CODE INCENTIVE ELIGIBILITY ISSUES

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For THE SAN FRANCISCO BAY AREA
REGIONAL ENERGY NETWORK

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I. Introduction

In accordance with the Request for Comments provided at the April 28, 2015 Workshop on Energy Efficiency Baselines and To-Code Incentive Eligibility Issues, the Association of Bay Area Governments ("ABAG"), on behalf of the San Francisco Bay Area Regional Energy Network ("BayREN"), submits these Comments to the questions to stakeholders.

BayREN is a collaboration of the nine counties that make up the Bay Area. Led by ABAG, BayREN implements effective energy saving programs on a regional level and draws on the expertise, experience, and proven track record of Bay Area local governments to develop and administer successful climate, resource, and sustainability programs. Since its inception, the BayREN has been addressing the three areas indicated by Decision 12.11.015 in the formation and implementation of programs: filling gaps that the Investor Owned Utilities are not serving; developing programs for hard to reach markets; and piloting new approaches to programs that may have the ability to scale and offer innovative avenues to energy savings. The result of the BayREN programs, to date, is approximately $9 million dollars in incentives, and savings of 5.2 million kWh and 494,195 therms.

Included in the BayREN Portfolio is a Codes and Standards program, designed to identify and share best practices and improve building code enforcement and building performance rates within the region. These efforts allow us to offer keen insight into the questions presented and, where appropriate, examples are included.

The BayREN supports and joins in the comments of the Local Government Sustainable Energy Coalition.

II. Discussion

A. Questions for Stakeholders

In addition to the comments provided by the LGSEC, BayREN provides the following in response to Question 3.

> **3. What specific information/data can you provide on the volume of deferred retrofits and retrofits that avoided code triggers or code compliance? In what types of buildings (as clarified above)? What evidence is there that these cases reflect norms of market activity rather than the exception?**

The BayREN Multifamily Program provides a good example of a successful program targeting existing conditions. The program assists in planning energy saving improvements designed to save 10% or more of a building's energy usage and provides $750 per unit in rebates to help pay for the upgrade. The program is open to multifamily buildings with five or more attached dwelling units in the nine county Bay Area. From the time the program was initiated through 2014, energy upgrades were completed in 8,383 units receiving $6,277,422 in rebates. The total electricity saved was 3,400,000 kWh and gas savings were 260,000 therms. Program enrollment has outperformed other multifamily energy upgrade programs in California by a factor of three to four, and stands out as an exemplary environmental improvement program.

This successful Program indicates the potential demand for, and benefits of, an energy efficiency program **based upon existing conditions**. A few details about the projects:

- Upgrades must meet code
- Total installed work valued at $11,198,026 for 124 projects (4 projects did not report "Total Project Cost")

- An average year built of 1956 for 126 projects (2 projects did not report "Year Built"), and 100 projects built before 1978 (when California first implemented the Building Energy Efficiency Standards)
- Average energy savings for participating projects is 16% over existing conditions.

Further EM&V work would be necessary to determine the extent the BayREN program acts as a (primary) motivator for property owners to make these upgrades. It is worth noting, however that the range of options considered by a multifamily property owner include:

- evaluation of the probability that a rebate will be paid
- the time and cost to navigate the rebate process
- the likelihood that rebate funds will be available upon project completion
- confidence that the contractor's performance will be sufficient to realize savings per engineering estimates.

Each one of these considerations creates one or more potential barriers that increase the complexity of the decision and reduce the expected utility of the retrofit.

B. BayREN PROP Report Findings

In 2013–2014, the BayREN launched its Codes & Standards Permit Resource Opportunity Program (PROP). After conducting a survey of stakeholders, BayREN's energy code experts conducted a series of visits to fifteen Bay Area building departments to learn about energy code enforcement barriers and challenges, identify successful enforcement strategies, and gather data about the impact of discrepancies on building performance. The findings were presented in the PROP Final Report and Resource Guide[1]. Trends identified relating to deferred retrofits and retrofits that avoided code triggers or code compliance include:

[1] This Report is viewable at https://www.bayren.org/codes/prop-final-report.

- Commercial lighting projects: Comments from Bay Area building departments indicate a significant drop in permit volume for Commercial projects that involve lighting. BayREN does not currently have a quantitative assessment of this scenario, but the comments received attribute this to the new 2013 EE standards pushing more commercial lighting projects underground.
- Single measure projects that expand into larger projects – BayREN member agencies have commented that it is common for single measure projects to evolve into larger work scopes that involve non-permitted work – i.e., boiler retrofits that evolve into whole building retrofits where the add on work does not get permitted.

Other observations from the Report findings are that energy outcome-based codes appeal to local governments because of their ability to capture existing conditions as well as provide a simplified process for evaluation that is based on performance in practice, rather than theoretical modeling or difficult to document engineering expectations. The Report findings indicate that the complexity of the building code results in progressively diminishing code compliance as a project progresses from plan check, to plan review, to field inspection.[2] The ability to incentivize and encourage actual building performance post-construction can be a way to improve compliance by simplifying the review and inspection process.

An issue that impacts this analysis is different meanings attributed to relevant terminology. The terms *compliance* or *compliant building,* for example, can be characterized in a number of ways. The Codes & Standards Evaluation Team views energy compliance as a target minimum, and considers only two outcomes: compliant or non-compliant. Therefore a building constructed to meet its energy budget (based on modeling of the prescriptive package) is

[2] *Permit Resource Opportunity Program Final Report*, the Bay Area Regional Energy Network, Codes & Standards Program, April 1, 2015, www.bayren.org/codes/prop-final-report

considered to be fully compliant. A building that performs better than this minimum is also considered compliant. Conversely, a building that does not achieve compliance can be close to or far away from the point of compliance.

Under this definition of compliance, projects can and typically do exceed compliance, sometimes by a substantial margin. Projects can contain compliance errors and product substitutions and still be deemed compliant. This is largely because few buildings are designed to perform at the exact target energy budget; there is typically a margin above the target that accommodates errors and substitutions during construction. Therefore buildings that just meet the minimum compliance standard (and are deemed 'compliant') are often leaving savings 'on the table'.

Instead of viewing compliance as an absolute point on a scale, another way to view it is as a relative point on a spectrum. In this view, buildings can be seen as *more compliant* or *less compliant* rather than simply compliant or noncompliant. The energy impact associated with discrepancies has the potential to be substantial (and quantifiable). Compliance with the inspection and review process, including submission of complete documentation, installation of required components, and proper testing of required functionality, may affect the building's energy performance.

The BayREN PROP report used the terminology "compliant" when referring to a building that meets minimum code requirements, regardless of whether errors are found. The terms *compliance margin* or *relative building performance* are also used to describe the relative change in building energy performance at different stages of review. The term *discrepancy* characterizes errors with enforcement of California Building Energy Efficiency Standards that

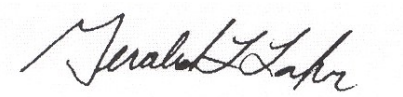
may or may not affect building performance or building compliance. The term *conformance* refers to adherence to required energy documentation and processes.

As identified in the PROP report, only a small fraction of projects found during the 15 jurisdictional investigations were found to have error-free energy documentation at all stages of BayREN's review.[3] Yet errors do not neatly correlate to *compliance* since the baseline (wither code minimum, above code, or below) is not consistent from project to project. Therefore, the way in which local governments view and enforce compliance with the energy code can be very different than how compliance is understood from a statewide regulatory perspective, especially when considering existing conditions of a building.

III. CONCLUSION

The BayREN appreciates the opportunity to comment on this important issue and looks forward to continued engagement on the topic. Having better alignment with the realities of the market place and the codes will result in the greater like hood of reaching our AB 32 and AB758 targets.

Dated: May 28, 2015



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[3] See the PROP report, Figure 5, page 14. www.bayren.org/codes/prop-final-report